

**FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST6185
TOYOCOM DEVICES OF AMERICA, INC.**

*FACT SHEET FOR STATE WASTE DISCHARGE PERMIT
TOYOCOM DEVICES OF AMERICA, INC.*

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST6185. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to the Cowlitz Water Pollution Control Plant (POTW¹). This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (Revised Code of Washington [RCW] 90.48.080 and 90.48.160) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. This statute includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the state. Regulations adopted by the state include procedures for issuing permits and establish requirements which are to be included in the permit (Chapter 173-216 Washington Administrative Code [WAC]).

This fact sheet and draft permit are available for review by interested persons as described in Appendix A—Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D—Response to Comments.

Table 1: General information

Applicant	Takeshi Ogawa, President
Facility Name and Address	Toyocom Devices of America, Inc. 1850 Prudential Boulevard Longview, WA 98632
Type of Facility:	Production of Synthetic Quartz Crystals; SIC Code: 3679
Facility Discharge Location	Latitude: 46° 08' 53" N Longitude: 122° 59' 13" W
Treatment Plant Receiving Discharge	Cowlitz Water Pollution Control Plant (POTW ¹); discharge through the City of Longview sewer system
Contact at Facility	Name: Lindsey L. Unruh Production Team Leader Telephone #: (360) 577-8900 ext. 227
Responsible Official	Name: Lindsey L. Unruh Title: Production Team Leader Address: 1850 Prudential Boulevard Longview, WA 98632 Telephone #: (360) 577-8900 ext. 227 FAX #: (360) 577-8111

¹ Publicly Owned Treatment Works

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BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

Toyocom Devices of America, Inc. (Toyocom) is a four-year-old facility subject to categorical pretreatment standards. The principal business activity is the production of synthetic quartz crystals. This activity is categorized under Standard Industrial Classification (SIC) Code 3679 *Electronic Components*, which includes *Quartz crystals for electronic application*. Further, the Electronic Crystals Subcategory of 40 CFR Part 469 includes pretreatment standards for the manufacture of electronic crystals. Therefore, in accordance with WAC 173-216-050(2), this facility is required to have a permit to discharge wastewater. Further, in accordance with 40 CFR Part 403 Toyocom is a significant industrial user. Toyocom began operation on May 25, 2001; therefore the facility is a new source.

HISTORY

The facility began operation on May 25, 2001. Initially, the facility had four operational autoclaves. Four more have been added later. The facility shut down temporarily on January 31, 2002, citing a general downturn in the electronic communications field and the Japanese economy. The company has restarted the facility since that time.

INDUSTRIAL PROCESSES

From Toyocom's application: "Toyocom Devices of America has a 15,000 square foot manufacturing building on an 8.5 acre site at the Mint Farm Industrial Park, Longview, Washington. The facility produces synthetic quartz crystals² that are eventually cut and assembled into electronic devices used in telecommunication and other electronic instruments.

The process of growing crystals starts with natural quartz rock³ that is washed and added to the lower section of an autoclave, the primary process equipment used in the facility. A 4 percent sodium hydroxide/lithium hydroxide solution is added and seed crystals are placed in the upper section. The autoclave is sealed and heated⁴ [and pressurized⁵]. Each batch takes approximately three months to grow.

The autoclave is opened and the quartz crystals are harvested, rinsed and inspected. The remaining sodium hydroxide solution is pumped to a mixing tank where it is neutralized and pre-treated before discharge into the city's wastewater system."

Toyocom operates one shift a day and employees 6 people. Normal office hours are 8 to 5 weekdays. During nights and weekends, the plant is monitored via automated notification/alarm system.

TREATMENT PROCESSES

Toyocom has identified two sources of industrial process wastewater in their engineering report, "Engineering Report, Toyocom Devices of America Wastewater System", received by the Department on March 1, 2002, and approved on May 2, 2002. The updated engineering report was attached to the application for permit renewal received on December 6, 2004.

The first wastewater stream is wash water from a natural quartz rock washing operation, where the quartz rock is washed in a rock tumbler in a water bath prior to introduction into the manufacturing process. The quartz washer removes dirt and fines from the natural quartz. The wash water from the washing process is directed to the floor drain after passing through a 12-mesh screen. Screened solids are removed and sent to a landfill. The quartz washer uses approximately 43,680 gallons of water per year or an average of

² Quartz crystals are used in electronic applications due to a constant frequency vibration.

³ Imported from Brazil

⁴ Required temperature in autoclave of 760 degrees Fahrenheit was reported by Lindsey L. Unruh on July 21, 2005

⁵ 111.9 mega Pascal (MPa) and 134 kilowatts (kW) were at the autoclave F5 during an inspection on July 21, 2005

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approximately 120 gallons of water per day for eight autoclaves. Approximately 3.5 cubic feet of solid waste, consisting of dirt and fines, are produced per year.

The second wastewater stream is comprised of the following:

- Spent autoclave solution (a caustic solution of approximately 4 percent sodium hydroxide/lithium hydroxide),
- Synthetic quartz rinse water,
- Autoclave rinse water,
- Water from two sinks of the 5th floor, and
- Demineralized water system drain.

The second wastewater stream is drained into the wastewater collection tank.

Normally 1,000 gallons per batch of waste water is then transferred from the wastewater collection tank to the wastewater mix tank (wastewater treatment tank). Because of the reactive nature of this highly caustic waste water and to prevent gelling, the waste water is diluted with 5,000 gallons of city water. The tank agitator mixes the solution, which is monitored periodically⁶ for pH after 15 percent HCl is added. Upon confirmation of the pH by manual testing, the 6,000 gallon batch of waste water is manually released to the sewer system 4 to 6 times per month.

PERMIT STATUS

The previous permit for Toyocom was issued on July 31, 2002, and modified on April 14, 2003. The permit will expire on June 30, 2006.

An application for permit renewal was submitted to the Department on December 6, 2004, and deemed to be incomplete by the Department on May 6, 2005, due to the following information required but not fully provided with the application:

- Wastewater Information; Page 7-8 of 17, Section E, item 2

The application was resubmitted on July 5, 2005, and accepted by the Department on August 1, 2005; even though additional wastewater information might be required.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on June 13, 2001.

During the history of the previous permit, the Permittee has exceeded the permit flow limit twice, November 2002, and January 2003, based on Discharge Monitoring Reports (DMRs) and other reports submitted to the Department and inspections conducted by the Department. The June 2004 DMR was received late by the Department.

The March 14, 2003, permit modification raised the permit from limit from 7,000 gallons per day (gpd) to 9,999 gpd to alleviate Toyocom compliance with the permit flow limit.

The following documents were required by the permit but not submitted to the Department:

1. Priority pollutant scan, and
2. Operation and maintenance manual.

⁶ An automatic pH adjustment is out of order.

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WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application and in discharge monitoring reports. The proposed wastewater discharge is characterized in **Table 2, Figure 1, Figure 2, Figure 3, Figure 4, and Figure 5.**

Table 2 Wastewater characterization

Parameter	Units	Minimum	Maximum	Average	Document
Flow, maximum daily	gallons per day (gpd)		9,999		Application
Flow, average monthly	gpd		1,200		Application
5-day Biochemical oxygen demand (BOD ₅)	Milligrams per liter (mg/L)		<=4		Application
Chemical oxygen demand (COD)	mg/L		18		Application
Total suspended solids (TSS)	mg/L	100	580	304	Application
Total dissolved solids (TDS)	mg/L		14,900		Application
Conductivity			8,630		Application
Ammonia-N	Micrograms per liter (µg/L)		<=5		Application
pH	Standard units (SU)	6.00	9.00		Application
Total residual chlorine	mg/L		<=0.1		Application
Nitrate + Nitrite-N	mg/L		0.3		Application
Total Kjeldahl N	µg/L		1.1		Application
Ortho-phosphate-P	mg/L		<=2.5		Application
Total-phosphate-P	mg/L		<=0.2		Application
Total Oil & Grease	mg/L	<=5	<=5	<5	Application
Total Petroleum Hydrocarbon			<=5		Application

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Table 2 Wastewater characterization

Parameter	Units	Minimum	Maximum	Average	Document
Calcium	µg/L		12,500		Application
Chloride	µg/L		8.3		Application
Fluoride	mg/L		<=2		Application
Magnesium	µg/L		2,020		Application
Potassium	µg/L		6,410		Application
Sodium	µg/L		2,920,000		Application
Sulfate	mg/L		15.9		Application
Arsenic (total)	µg/L	<=10			Application
Barium (total)	µg/L	24.3			Application
Cadmium (total)	µg/L	<=5			Application
Chromium (total)	µg/L	35			Application
Copper (total)	µg/L	97.7			Application
Lead (total)	µg/L	<=4			Application
Mercury	µg/L	<=0.2			Application
Molybdenum (total)	µg/L	645			Application
Nickel (total)	µg/L	<=20			Application
Selenium (total)	µg/L	<=100			Application
Silver (total)	µg/L	<=10			Application
Zinc (total)	µg/L	186			Application
BOD ₅	mg/L	<=4	85	8.7	Discharge Monitoring Reports (DMRs ⁷)
Flow	gpd	1,158	18,477	6,799	DMRs

⁷ 23 months between November 2002 and May 2005

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Table 2 Wastewater characterization

Parameter	Units	Minimum	Maximum	Average	Document
Oil & Grease	mg/L	<=5	5	5	DMRs
pH	SU	5.8-8.98	6.2-8.98		DMRs
Total Suspended Solids	mg/L	<=5	9,160	1,071	DMRs

Figure 1 Flow—maximum daily

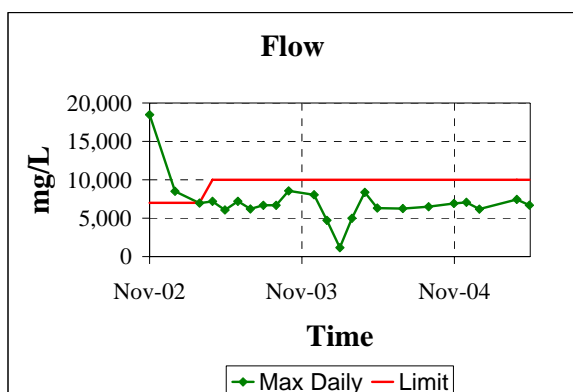


Figure 2 pH—instantaneous minimum and maximum values in a given month

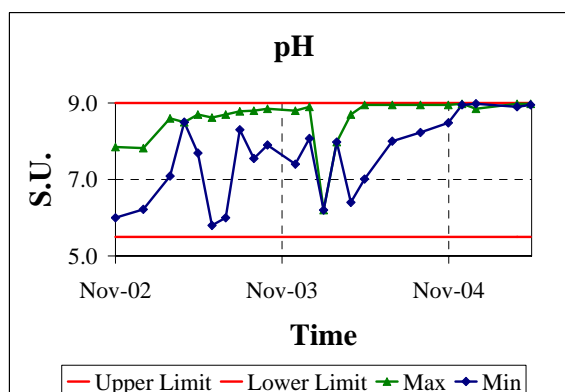


Figure 3 5-day biochemical oxygen demand—maximum daily

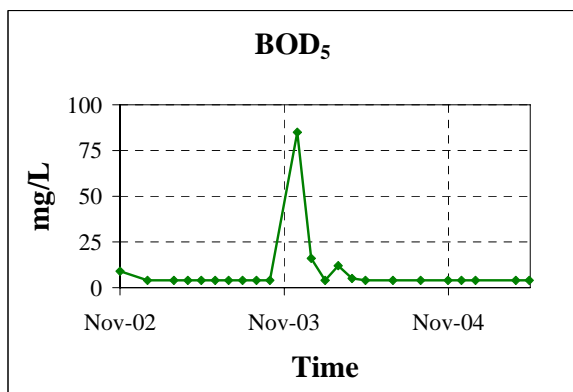
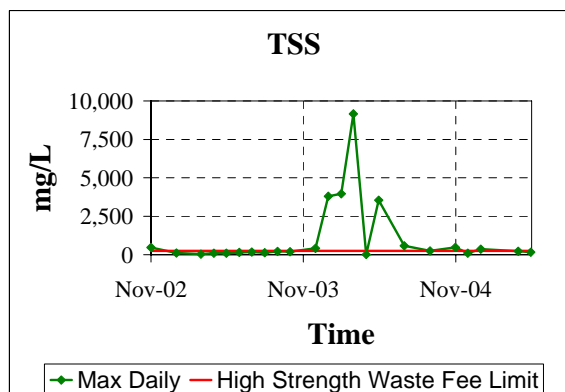
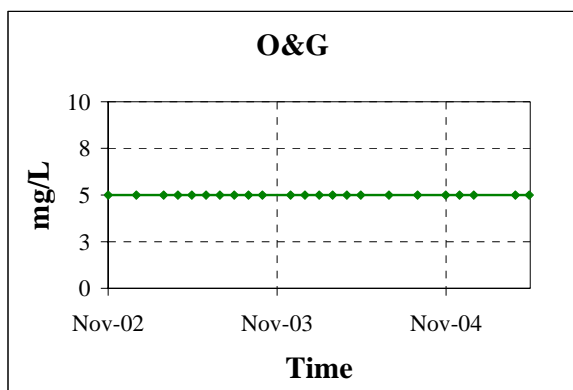


Figure 4 Total suspended solids—maximum daily



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Figure 5 Oil and grease—maximum daily



PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be based on the technology available to treat the pollutants (technology-based) or be based on the effects of the pollutants to the POTW (local limits). Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not interfere with the operation of the POTW.

The more stringent of the local limits-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). Existing federal categorical limitations for this facility are found under 40 CFR Part 469. Specifically, this facility falls under the Pretreatment Standards for New Sources in the Electronic Crystals subcategory (469.28), Table 3. The following limitations are contained in this section:

Table 3 Pretreatment Standards applicable to Toyocom

Pollutant	Daily Maximum	Monthly Average
Total Toxic Organics (TTO)	1.37 mg/L	
Arsenic	2.09 mg/L	0.83 mg/L

A footnote is attached to the arsenic limits, which states that this set of limits only apply to manufacturers of gallium or indium arsenide crystals. Therefore, these limits do not apply to Toyocom and will not be put into the permit.

The federal regulations (40 CFR 469.13(c & d)) have a provision to waive monitoring of TTO. Toyocom uses a small amount of solvents for equipment cleaning, but does not use solvents directly in the manufacturing process, nor in any manner than could reasonably introduce those solvents into their wastewater. Toyocom requested a waiver of TTO monitoring. On June 17, 2002, this waiver request was granted with the submission of an acceptable solvent management plan and the understanding that the certification statement had to be included on the monthly reports. The TTO monitoring waiver will be extended until expiration day of this permit assuming that the updated solvent management plan is submitted and accepted in writing by the Department.

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EFFLUENT LIMITATIONS BASED ON LOCAL LIMITS

In order to protect the Cowlitz County Pollution Control Publicly Owned Treatment Works from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge, or potentially hazardous exposure levels, limitations for certain parameters are necessary. These limitations are based on local limits established by:

City of Longview and codified in the Longview Municipal Code, Chapter 15.26 Sewage Disposal (Table 4);

Cowlitz County and codified in the Cowlitz County Code, Chapter 15.14 Water and Sewer Utilities Regulations (Table 5); and

Cowlitz Water Pollution Control (CWPC)—preliminary local limits under development (Table 6).

Table 4 Limitations codified in the Longview Municipal Code, Chapter 15.26 Sewage Disposal

Parameter	Units	Minimum	Maximum
pH	Standard units (SU)	5.0	10
Temperature at the introduction to the POTW	Degrees Fahrenheit (°F)		104

Table 5 Limitations codified in the Cowlitz County Code, Chapter 15.14 Water and Sewer Utilities Regulations

Parameter	Units	Minimum	Maximum
pH	Standard units (SU)	5.5	9.0
Temperature	Degrees Fahrenheit (°F)		150
Fat, oil or grease (FOG)	Parts per million (ppm)		100

Table 6 Cowlitz Water Pollution Control—preliminary local limits under development as suggested by the Department limit in an email to the CWPC dated April 27, 2005.

Parameter	Units	Minimum	Maximum
pH	Standard units (SU)	6.0	11.0 ⁸
Petroleum based oils ⁹	Milligrams per liter (mg/L)		50-100
FOG	mg/L		100 ¹⁰

⁸ Maximum allowed under WAC 173-216-060

⁹ As measured by EPA method 1664 SGT-HEM (Silicon Gel Treated - Hexane Extraction Method)

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Table 5 Limitations codified in the Cowlitz County Code, Chapter 15.14 Water and Sewer Utilities Regulations

Parameter	Units	Minimum	Maximum
Cyanide	mg/L	<i>(not reported)</i>	(0.2-0.64)-1.7
Antimony	mg/L	<i>(not reported)</i>	10
Arsenic	mg/L	<i>(no reasonable potential)</i>	0.2
Cadmium	mg/L	<i>(no reasonable potential)</i>	0.1
Chr +6	mg/L	<i>(no reasonable potential)</i>	10
Chr +3	mg/L	<i>(no reasonable potential)</i>	10.
Copper	mg/L	<i>(no reasonable potential)</i>	3.5
Lead	mg/L	<i>(no reasonable potential)</i>	0.5
Mercury	mg/L	<i>(no reasonable potential)</i>	0.02
Molybdenum	mg/L	<i>(reasonable potential)</i>	0.1
Nickel	mg/L	<i>(no reasonable potential)</i>	2.3
Selenium	mg/L	<i>(reasonable potential)</i>	0.5
Silver	mg/L	<i>(no reasonable potential)</i>	0.2
Zinc	mg/l	<i>(no reasonable potential)</i>	4.2

Based on the wastewater information provided in the 2005 application there is no reasonable potential to violate any limits listed in Table 4, Table 5 and Table 6 accept for pH, molybdenum, and selenium. Selenium may be eliminated from monitoring requirement if more sensitive analytical method is used to analyze for this pollutant. Further, no data was provided for cyanide and antimony therefore this permit

¹⁰ The limit will not be applied if an appropriately sized grease interceptor is approved by the municipality and installed and maintained (and records kept or a certification statement submitted every six months depending on how you run this program).

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will require monitoring for these pollutants. Additionally, TSS was high as reported in the application and DMRs. Monitoring for TSS is required by this permit.

Twenty Three (23) BOD₅ samples were taken. The highest was 85 mg/L. Most were undetectable below 4 mg/L. This permit will not require monitoring for BOD₅ anymore.

Previously the Department set fluoride limit for discharges resulting from all process operations associated with the manufacture of semiconductors. Based on the permit application, the Department concludes that the fluoride limit is not necessary for Toyocom since there is no reasonable potential that such limit (Table 7) would be exceeded.

Table 7: Technology-based effluent limitations for fluoride

Parameter	Units	Average Monthly ^a	Maximum Daily ^b
Fluoride, total	mg/l	17.4	32.0
^a The average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.			
^b The daily maximum effluent limitation is defined as the highest allowable daily discharge.			

COMPARISON OF LIMITATIONS WITH THE EXISTING PERMIT ISSUED JULY 31, 2002

Table 8 Comparison of limitations with the existing permit

Parameter	Units	Existing Limits	Proposed Limits
Flow	Gallons per day (gpd)	9,999	9,999
pH	Standard units (SU)	Between 5.5 and 9.0	Between 5.0 and 10
Total toxic organics (TTO)	mg/L	None	1.37
TSS	mg/L	None	None
Molybdenum	mg/L	None	0.1
Selenium	mg/L	None	0.5
Cyanide	mg/L	None	1.7
Antimony	mg/L	None	10

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, and that effluent limitations are being achieved (WAC 173-216-110).

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The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Monitoring for TSS, molybdenum, selenium, cyanide, and antimony is being required to further characterize the effluent. These pollutant(s) could have a significant impact on the receiving POTW.

Monitoring for priority pollutants is required because the Permittee failed to complete a priority pollutant scan for the previous permit.

Table 9 Outfall description

Monitoring Point	Outfall	Parameters Monitored
Discharge from the wastewater treatment tank	001	Flow, pH, TTO ¹¹ , TSS, molybdenum, selenium, cyanide, antimony, and priority pollutants

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110 and 40 CFR 403.12 (e),(g), and (h)).

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.4. as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment. The proposed permit requires submission of an Operations & Maintenance Manual (O & M) for the entire wastewater system. The O&M manual was required by the previous permit but not submitted to the Department.

PROHIBITED DISCHARGES

Certain pollutants are prohibited from being discharged to the POTW. These include substances which cause pass-through or interference, pollutants which may cause damage to the POTW or harm to the POTW workers (Chapter 173-216 WAC) and the discharge of designated dangerous wastes not authorized by this permit (Chapter 173-303 WAC).

DILUTION PROHIBITED

The Permittee is prohibited from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limitations.

¹¹ Waved if no later than July 31, 2006, in accordance with 40 CFR Part 469, the Permittee submits a solvent management plan that specifies to the Department's satisfaction the toxic organic compounds used; the method of disposal used instead of dumping, such as reclamation, contract hauling, or incineration; and procedures for assuring that toxic organics do not routinely spill or leak into the wastewater.

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SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to POTW permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the Permittee to control production or wastewater discharge in order to maintain compliance with the permit. Condition G10 prohibits the reintroduction of removed pollutants into the effluent stream for discharge. Condition G11 requires the payment of permit fees. Condition G12 describes the penalties for violating permit conditions.

PUBLIC NOTIFICATION OF NONCOMPLIANCE

A list of all industrial users which were in significant noncompliance with Pretreatment Standards or Requirements during any of the previous four quarters may be annually published by the Department in a local newspaper. Accordingly, the Permittee is apprised that noncompliance with this permit may result in publication of the noncompliance.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics. The Department proposes that the permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Washington State Department of Ecology.

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

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APPENDICES

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on June 20, 2005, and June 30, 2005, in The Daily News to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on (date) in (name of publication) to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30 day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6280, or by writing to the address listed above.

This permit was written by Jacek Anuszewski, P.E.

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APPENDIX B—GLOSSARY

Ammonia—Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation—The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass—The intentional diversion of waste streams from any portion of the collection or treatment facility.

Categorical Pretreatment Standards—National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a POTW by existing or new industrial users in specific industrial subcategories.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.)

Construction Activity—Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring—Uninterrupted, unless otherwise noted in the permit.

Engineering Report—A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

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Grab Sample—A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User—A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Interference— A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Local Limits—Specific prohibitions or limits on pollutants or pollutant parameters developed by a POTW.

Maximum Daily Discharge Limitation—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Pass-through— A discharge which exits the POTW into waters of the—State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH—The pH of a liquid measures its acidity or alkalinity. A pH of 7.0 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 percent of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

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The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

Slug Discharge—Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the POTW. This may include any pollutant released at a flow rate which may cause interference with the POTW.

State Waters—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria—A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids—That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit—A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C—TECHNICAL CALCULATIONS

APPENDIX D—RESPONSE TO COMMENTS